

Gandhinagar Institute of Pharmacy

Bachelor of Pharmacy (Undergraduate)

Semester I



Subject Code: BP101T	Subject Title: Human Anatomy and Physiology-I (Theory)
Pre-requisite: --	

Course Objective: Upon completion of this course, the students would be able to

1. Describe gross morphology, structure, and functions of various organs of the human body.
2. Write various homeostatic mechanisms and their imbalances.
3. Identify, draw, and differentiate various tissues and organs of different systems of the human body.
4. Summarize coordinated working pattern of different organs of each system.

Teaching Scheme (Hours per week)			Evaluation Scheme (Marks)			
Lecture	Tutorial	Credit	Theory			Total
			University Assessment	Continuous Assessment	Internal Assessment	
3	1	4	75	10	15	100

Detailed Syllabus:

Sr. No.	UNIT	Hours	Weightage (%)
1.	Introduction to human body Definition and scope of anatomy and physiology, levels of structural organization and body systems, basic life processes, homeostasis, basic anatomical terminology. Cellular level of organization Structure and functions of cell, transport across cell membrane, cell division, cell junctions. General principles of cell communication, intracellular signalling pathway activation by extracellular signal molecule, Forms of intracellular signalling: a) Contact-dependent b) Paracrine c) Synaptic d) Endocrine Tissue level of organization Classification of tissues, structure, location and functions of epithelial, muscular and nervous and connective tissues	10 Hours	22.22%

2.	<p>Integumentary system, Structure and functions of skin</p> <p>Skeletal system Divisions of skeletal system, types of bone, salient features and functions of bones of axial and appendicular skeletal system Organization of skeletal muscle, physiology of muscle contraction, neuromuscular junction.</p> <p>Joints Structural and functional classification, types of joints movements and its articulation</p>	10 Hours	22.22%
3.	<p>Body fluids and blood Body fluids, composition and functions of blood, hemopoiesis, formation of hemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors, transfusion, its significance and disorders of blood, Reticulo endothelial system.</p> <p>Lymphatic system Lymphatic organs and tissues, lymphatic vessels, lymph circulation and functions of lymphatic system</p>	10 Hours	22.22%
4.	<p>Peripheral nervous system Classification of peripheral nervous system: Structure and functions of sympathetic and parasympathetic nervous system. Origin and functions of spinal and cranial nerves.</p> <p>Special senses Structure and functions of eye, ear, nose and tongue and their disorders.</p>	8 Hours	17.77%
5.	<p>Cardiovascular system Heart anatomy of heart, blood circulation, blood vessels, structure and functions of artery, vein and capillaries, elements of conduction system of heart and heartbeat, its regulation by autonomic nervous system, cardiac output, cardiac cycle. Regulation of blood pressure, pulse, electrocardiogram and disorders of heart.</p>	7 Hours	15.55%

Gandhinagar Institute of Pharmacy
Bachelor of Pharmacy (Undergraduate)
Semester I



Subject Code: BP101P	Subject Title: Human Anatomy and Physiology-I (Practical)
Pre-requisite:--	

Course Objective: Upon completion of this course the student should be able to

1. Distinguish various tissues by observing morphology and structure through microscopy.
2. Identify various organs of the different body systems and describe their functions.
3. Identify various bones.
4. Record pulse rate and blood pressure
5. Analyze the problem, communicate suggested solution, and interpret the results.

Teaching Scheme (Hours per week)		Evaluation Scheme (Marks)			
Practical	Credit	Theory			Total
		University Assessment	Continuous Assessment	Internal Assessment	
4	2	35	5	10	50

Sr. No.	Title of the Practical
1	Study of compound microscope.
2	Microscopic study of epithelial and connective tissue
3	Microscopic study of muscular and nervous tissue
4	Identification of axial bones
5	Identification of appendicular bones
6	Introduction to hemocytometry.
7	Enumeration of white blood cell (WBC) count
8	Enumeration of total red blood corpuscles (RBC) count
9	Determination of bleeding time
10	Determination of clotting time
11	Estimation of hemoglobin content
12	Determination of blood group.
13	Determination of erythrocyte sedimentation rate (ESR).
14	Determination of heart rate and pulse rate.
15	Recording of blood pressure.

Recommended Study Material:

1. Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypee brother's medical publishers, New Delhi.
2. Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, Churchill, Livingstone, New York
3. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co, Riverview, MIUSA
4. Textbook of Medical Physiology- Arthur C, Guyton and John. E. Hall. Miamisburg, OH, U.S.A
5. Principles of Anatomy and Physiology by Tortora Grabowski. Palmetto, GA, U.S.A.
6. Textbook of Human Histology by Inderbir Singh, Jaypee brother's medical publishers, New Delhi.
7. Textbook of Practical Physiology by C.L. Ghai, Jaypee brother's medical publishers, New Delhi.
8. Practical workbook of Human Physiology by K. Srinageswari and Rajeev Sharma, Jaypee brother's medical publishers, New Delhi.
9. Willson, K. J. W. Ross and Willsons foundation of anatomy and Physiology, Churchill livingstone, Edinburg.
10. Goyal, R. K., Natvar M. P. and Shah S. A., Practical Anatomy and Physiology, Latest Edition, B.S. Shah Prakashan, Ahmedabad.
11. Goyal, R. K., Natvar M. P. and Shah S. A., Anatomy and Physiology, Latest Edition, B.S. Shah Prakashan, Ahmedabad.
12. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co, Riverview, MIUSA
13. Textbook of Medical Physiology- Arthur C, Guyton and John. E. Hall. Miamisburg, OH, U.S.A.
14. Human Physiology (vol 1 and 2) by Dr. C.C. Chatterjee, Academic Publishers Kolkata
15. Rannade VG, Textbook of Practical Physiology, Latest edition, PVG Publisher, Pune
16. Human Anatomy and Physiology, Paul D. Anderson, Jones and Bartlett publisher, London

❖ Web Materials:

1. [http:// www.visiblebody.com/](http://www.visiblebody.com/)
2. <http://www.getbodysmart.com/>
3. [http:// www.innerbody.com](http://www.innerbody.com)
4. [http:// libguides.middlesex.mass.edu/](http://libguides.middlesex.mass.edu/)
5. http://wps.aw.com/bc_marieb_ehap_8/
6. http://scioly.org/wiki/index.php/Anatomy_and_Physiology